

CLAIMS

We claim:

1. A mold tool stack for making plastic overcaps from heated resin, the mold tool stack comprising:

5 a core;

a cavity plate located above the core, one of the core and the cavity plate being axially movable relative to the other of the core and the cavity plate to allow the core and the cavity plate to engage with each other when the mold tool stack is in a closed position and to allow the core and the cavity plate to separate from each other when the mold is in an open
10 position, when the mold tool stack is in the closed position a cavity is formed between a top surface of the core and a portion of a bottom surface of the cavity plate, the portion of the bottom surface of the cavity plate corresponds to a top side of the plastic overcap and the top surface of the core corresponds to a bottom side of the plastic overcap, the portion of the bottom surface of the cavity plate being substantially flat and blemish-free; and

15 a resin passageway located within the core with a gate in the top surface of the core, the gate having a valve proximate the top surface of the core to regulate heated resin flowing out of the resin passageway and into the cavity, wherein the valve being proximate the top surface of the core allows for minimal wasted resin between the valve and the plastic overcap and further allows for a gate mark to be present on the bottom side of the plastic
20 overcap to allow for the top side of the plastic overcap to be substantially flat and blemish-free.

2. The mold tool stack of claim 1 wherein the resin passageway is centrally located within the core with the gate being in the center of the top surface of the core.

25 3. The mold tool stack of claim 1 further comprising a strip plate bushing that circumscribes the core and moves upwardly relative to the core, the strip plate bushing forming an outer bottom surface of the cavity, the upward movement of the strip plate bushing acting to lift the plastic overcap off of the top surface of the core to facilitate removal of the plastic overcap from within the mold tool stack.

4. The mold tool stack of claim 3 further comprising air jets located in one of the core and the strip plate bushing to allow for the forcible ejection of air against the bottom side

of the plastic overcap to facilitate removal of the plastic overcap from within the mold tool stack.

5. The mold tool stack of claim 1 further comprising at least one tube within the cavity plate through which cool fluid flows in order to accelerate the cooling of the resin within the cavity.

6. The mold tool stack of claim 1 further comprising heating coils around the resin passageway to keep the resin within the passageway heated.

7. A method for making a plastic overcap using a mold tool stack, the mold tool stack having a core and a cavity plate forming a cavity therebetween, the core forming a bottom of the cavity and the cavity plate forming a top of the cavity, such that the top of the cavity corresponds to a top side of the plastic overcap and the bottom of the cavity corresponds to a bottom side of the plastic overcap, the core having a resin passageway therein with a gate in a top surface of the core, the gate having a valve proximate the top surface of the core to regulate an amount of resin flowing out of the resin passageway and into the cavity, one of the core and the cavity plate being axially movable relative to the other of the core and the cavity plate, the mold method comprising the steps of:

closing the mold tool stack such that the core is in contact with the cavity plate to form the cavity therebetween;

opening the valve to allow resin to enter the cavity;

20 closing the valve to stop the flow of resin into the cavity once a desired amount of resin has entered the cavity;

allowing the resin within the cavity to cool to form the plastic overcap; and

25 opening the mold tool stack to allow removal of the plastic overcap from within the mold tool stack, such that the plastic overcap produced has a small protrusion of excess resin on the bottom surface due to the proximity of the valve to the top surface of the core, thereby allowing the top side of the plastic overcap to be blemish-free to facilitate placement of labels and other markings thereon.

8. The mold method of claim 7 wherein the mold tool stack has a strip plate bushing that circumscribes the core and moves upwardly relative to the core, the strip plate

bushing forming an outer bottom surface of the cavity, the mold method further comprising the step of upward movement of the strip plate bushing to lift the plastic overcap off of the top surface of the core to facilitate the removal of the plastic overcap from within the mold tool stack.

5 9. The mold method of claim 8 wherein the mold tool stack has air jets located in one of the core and the strip plate bushing, the mold method further comprising the step of forcible ejection of air out of the air jets and against the bottom side of the plastic overcap to facilitate the removal of the plastic overcap from within the mold tool stack.

10 10. The mold method of claim 7 further comprising the step of circulating cool fluid through at least one tube within the cavity plate in order to accelerate the cooling of the resin within the cavity.

11. The mold method of claim 7 further comprising the step of heating coils around the resin passageway in order to keep the resin within the passageway heated.

12. A plastic overcap for sealing medicament containers, the plastic overcap comprising a single circular disk having a top side, a bottom side, and a side skirt extending downwardly from the outside edge of the bottom side, the top side being substantially flat and blemish-free to facilitate writing on or placement of labels on the top side of the plastic overcap in order to properly identify a medicament within the medicament container, the bottom side having a small cylindrical ring extending downwardly from the bottom side, the plastic overcap further having a gate mark on the bottom side inside the cylindrical ring, the gate mark being on the bottom side so as not to disrupt the substantially flat and blemish-free top side.

20 13. The plastic overcap of claim 12 wherein the small cylindrical ring extends downwardly from the center of the bottom side.